

What is claimed is:

1. In a pressurized vessel including a bearing, the bearing disposed interior to the vessel, the bearing comprising a rolling element and a seal, an improvement comprising a hole in the seal for allowing the bearing internal pressure to equalize with the vessel pressure.
2. An improvement according to claim 1 wherein the hole in the seal is less than .014 inches in diameter and greater than .004 inches in diameter.
3. An improvement according to claim 1, further comprising a gas-permeable membrane substantially covering the hole in the seal.
4. An improvement according to claim 3, wherein the hole in the seal is greater than .06 inches in diameter.
5. A method for minimizing a pressure differential between the interior of a bearing and the exterior of the bearing in a pressurized vessel, the method comprising:
  - a. providing the pressurized vessel including a bearing disposed therein, the bearing including a rolling element and a seal; and
  - b. making a hole in the seal.
6. A method according to claim 5, further comprising:
  - c. covering the hole in the seal with a gas-permeable membrane.
7. In a bearing for use in a pressurized vessel, the bearing including a rolling element and a seal, an improvement comprising a first lip seal that deforms such that the bearing internal pressure equalizes with the vessel pressure.
8. A bearing according to claim 7, wherein the first lip seal deforms toward the interior of the bearing when the vessel pressure is higher than the bearing interior pressure.
9. A bearing according to claim 7, the improvement further comprising a second lip seal that deforms such that the bearing internal pressure equalizes with the vessel pressure.
10. A bearing according to claim 9 wherein the first lip seal and the second lip seal deform in opposite directions with respect to the interior of the bearing.
11. A bearing according to claim 9 wherein the first lip seal and the second lip seal deform in the same direction with respect to the interior of the bearing.
12. A method for minimizing a pressure differential between the interior of a bearing and the exterior of the bearing, the method comprising:
  - a. providing the bearing for use in a pressurized vessel, the bearing including a

rolling element and a lubricant;

b. installing a first lip seal to retain the lubricant in the bearing, the lip seal shaped to deform so that the pressure differential decreases.

13. A method according to claim 13, further comprising:

c. installing a second lip seal to retain the lubricant in the bearing, the second lip seal shaped to deform in a direction that is opposite to the direction of deformation of the first lip seal.

14. In a bearing for use in a pressurized vessel, the bearing including a rolling element, a lubricant and a seal, an improvement comprising a hole in the seal and a gas-permeable membrane substantially covering the hole in the seal for allowing the bearing internal pressure to equalize with the vessel pressure.

15. A bearing according to claim 14, wherein the hole in the seal is greater than .06 inches in diameter.

16. A method for minimizing a pressure differential between the interior of a bearing and the exterior of the bearing, the method comprising:

a. providing the bearing for use in a pressurized vessel, the bearing including a rolling element, a lubricant and a seal;

b. making a hole in the seal; and

c. covering the hole in the seal with a gas-permeable membrane.